Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Restoring Internet Freedom	)	WC Docket No. 17-108
	)	

REPLY COMMENTS OF NCTA – THE INTERNET & TELEVISION ASSOCIATION

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NCTA – The Internet & Television Association ("NCTA") hereby replies to the opening comments filed in response to the Notice of Proposed Rulemaking ("NPRM") in the above-captioned proceeding.[1]

INTRODUCTION AND SUMMARY

The opening comments confirm the soundness of the NPRM's proposal to restore the longstanding information service classification for broadband Internet access service ("BIAS"). That classification most faithfully construes the relevant definitions in the Communications Act of 1934, as amended (the "Act"), and the light-touch Title I framework that accompanies that classification has played a vital role in fueling the remarkable development and growth of the Internet economy.

Proponents of Title II regulation challenge the NPRM's recognition of the varied information-processing elements that are included in BIAS, but their suggestion that the Act cannot support an information service classification is foreclosed by *Brand X*, which upheld that very same classification based on the same core capabilities BIAS providers offer consumers today. Such commenters also fail to advance persuasive factual arguments regarding the appropriate classification of BIAS. As many commenters (including several technology experts)

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[1] *See Restoring Internet Freedom*, Notice of Proposed Rulemaking, 32 FCC Rcd 4434 ¶ 1 (2017) ("NPRM").

recognize, the contention that BIAS providers offer telecommunications on a stand-alone basis ignores or mischaracterizes the various capabilities BIAS providers offer for generating, acquiring, storing, transforming, processing, retrieving, utilizing, and making available information *via telecommunications*. And, try as they might, proponents of Title II regulation cannot shoehorn these information-processing capabilities into the telecommunications management exception from the information service definition, because those capabilities provide valued functions to end users, rather than simply managing the transmission and routing of packets on the BIAS provider's own behalf.

Opponents of the NPRM's proposals fare no better in advancing the thesis that the heavy-handed mandates of Title II have been and will be cost-free. A dozen leading economists have submitted studies documenting that Title II in fact has reduced the rate of investment in broadband facilities and chilled innovation, consistent with the bedrock principle of economics (and common sense) that subjecting a service to increased regulatory burdens and uncertainty inhibits the flow of capital and the willingness to engage in experimentation. By contrast, there is a noticeable lack of economic studies supporting continued Title II regulation of BIAS, and proponents of Title II are left to relying on misleading analyses and resort to manipulating or making up data in an effort to explain away the harms of common carrier regulation.

Finally, opponents' fearmongering about the supposed demise of Internet openness under Title I overlooks the reality that the Internet has always been open and free, and that the consensus principles of openness were developed and long thrived under Title I *without* common carrier regulation. It is preposterous to claim that Title II is essential to safeguarding the virtuous circle of investment and innovation when the Title I regime was such a remarkable and unqualified success. Commenters' efforts to demonstrate that BIAS providers have an incentive

and ability to harm their customers rely heavily on a thin and discredited list of supposed historical violations, and otherwise miss the mark. Such speculative and implausible claims contrast starkly with the substantial economic evidence in the record of real-world harms caused by Title II.

While market forces are sufficient to ensure that BIAS providers continue to act in the interests of consumers, the record also confirms that there are several options for creating an appropriately tailored regulatory backstop. Most notably, NCTA, together with other leading representatives of the broadband industry, supports legislation to memorialize bright-line open Internet rules that avoid the overhang of 1934 utility regulations. In addition, the record provides strong support for FTC oversight to ensure that BIAS providers honor their public commitments to refrain from blocking, throttling, and other anticompetitive conduct, and numerous commenters note that the D.C. Circuit has held that Section 706 of the Telecommunications Act of 1996 provides a foundation for Commission action without any need to resort to Title II. In pursuing any of these options, the Commission should ensure that any regulatory framework avoids the overreach associated with the general conduct standard and refrains from regulating Internet traffic-exchange arrangements or specialized services. In addition, the Commission should maintain a technologically neutral approach and ensure that national policy is not undermined by inconsistent state or local requirements.

DISCUSSION

I. THE RECORD PROVIDES STRONG SUPPORT FOR REINSTATING AN INFORMATION SERVICE CLASSIFICATION FOR BIAS

A. The Opening Comments Demonstrate That an Information Service Classification Is the Best Fit for BIAS

Numerous commenters recognize that BIAS is best considered an information service, because it offers consumers each and every one of the information-processing capabilities

included in the statutory definition of that term, rather than consisting of an offer of pure, unadorned telecommunications. As the NPRM recognizes,[2] and as NCTA and several of its members pointed out in their opening comments, the essence of BIAS is the offering of capabilities that allow consumers to, among other things, retrieve information from websites; generate social media posts, blogs, and other content; store information in the cloud; and otherwise transform and process information in various additional ways that satisfy the statutory definition of "information service."[3] Other commenters likewise recognize that BIAS is an information service based on these inherent capabilities. As AT&T notes, BIAS "is an 'information service' and not a 'telecommunications service' for the most basic of reasons: by definition, it offers the 'capability' of interacting with stored data."[4] "Indeed, the whole point of

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2 *See* NPRM ¶¶ 26-37, 54.

3 47 U.S.C. § 153(24); *see, e.g.*, Comments of Comcast Corp., WC Docket No. 17-108, at 12-13 (filed Jul. 17, 2017) ("Comcast Comments") (describing how BIAS offers consumers the ability "to 'acquir[e]' and 'retriev[e]' information from websites and other sources of online content," "to 'stor[e] information, for instance, by enabling users to back up personal files to the cloud, or through automated processes that save 'user IDs and passwords, configuration parameters[,] and log files," " to 'generate[]' and 'mak[e] available' information by creating and uploading new content, such as by emailing pictures and videos to friends and family," and "to 'transform[]' and 'process[]' information" and to 'utiliz[e]' information by interacting with stored data"); Comments of Charter Communications, Inc., WC Docket No. 17-108, at 13-14 (filed Jul. 17, 2017) ("Charter Comments") (providing similar examples); Comments of Cox Communications, Inc., WC Docket No. 17-108, at 9-10 (filed Jul. 17, 2017) ("Cox Comments") (same); Comments of NCTA – The Internet & Television Association, WC Docket No. 17-108, at 13-14 (filed Jul. 17, 2017) ("NCTA Comments") (same).

4 Comments of AT&T Services, Inc., WC Docket No. 17-108, at 68 (filed Jul. 17, 2017) ("AT&T Comments"); *see also id.* (describing how BIAS offers each of the eight capabilities included in the statutory definition of information service).

Internet access is to offer the 'capability' to obtain and manipulate the information stored on the millions of interconnected computers that constitute the Internet."[5]

Commenters further note that this understanding of BIAS comports with longstanding Commission precedent (before the *Title II Order* abruptly changed course)[6] and with the Supreme Court's analysis in *Brand X*. As AT&T explains, the "gateway" functionality performed by BIAS was recognized as an "enhanced service" under the Modification of Final Judgment ("MFJ") regime developed after the breakup of the Bell System and under the *Computer Inquiry* rules—both of which Congress relied on in enacting the definition of "information service" in the Telecommunications Act of 1996.[7] The Commission and the Department of Justice likewise relied on this history in defending the classification of cable modem service as an information service, recognizing that, as with antecedent gateway services, "Internet access inherently offers the capability to 'click[] through' to third-party websites and obtain the 'contents of the requested web page[],' allowing a subscriber to 'interact[] with stored data.'"[8] Indeed, as Verizon points out, these points were so well-established that it was "unchallenged" that cable modem service was an information service based on the capabilities it offered, including enabling users "to browse the World Wide Web, to transfer files from file archives available on the Internet via the 'File Transfer Protocol,' and to access e-mail and

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5 *Id.* at 68-69; *see also* Comments of Verizon, WC Docket No. 17-108, at 35-36 (filed Jul. 17, 2017) ("Verizon Comments") (explaining how BIAS is an information service under the plain terms of the Act).

6 *See Protecting and Promoting the Open Internet*, Report and Order on Remand, Declaratory Ruling, and Order, 30 FCC Rcd 5601 ¶ 308 (2015) ("*Title II Order*").

7 AT&T Comments at 61-68.

8 *Id.* at 69 (quoting FCC Reply Br. at 5, *Brand X*, No. 04-277 (Mar. 18, 2005)).

Usenet newsgroups."[9] Rather, the sole dispute in *Brand X* was "whether cable providers *also* offered a separable telecommunications service in providing this information service, or whether instead the Commission had reasonably concluded that the transmission of information was an integrated aspect of the information-service offering, as the Court held."[10]

Proponents of maintaining a Title II classification argue that *edge providers* are the ones that offer all these information-processing capabilities (enabling consumers to store and retrieve information from websites, etc.), and that BIAS providers merely supply a transparent telecommunications conduit for accessing such edge services.[11] But that argument is wrong on several different levels, as many commenters recognize.

First, while defenders of Title II point out that BIAS providers do not *unilaterally* enable the retrieval and storage of web content or other types of information-processing described above,[12] that is beside the point. BIAS "is an information service . . . because it provides consumers with a comprehensive capability for manipulating information using the Internet via high-speed telecommunications"[13]—irrespective of whether it provides the *entirety* of any end user functionality or whether it does so *alone* (as opposed to in tandem with edge providers). As leading technologist Richard Bennett explains, "it is inaccurate to say" that a BIAS provider does no more than "giv[e] an end user *access* to the Internet, as if the Internet were some far off and

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9 Verizon Comments at 36 (quoting *National Cable & Telecom. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967, 987 (2005)).

10 *Id.* (citing *Brand X*, 545 U.S. at 990).

11 *See, e.g.*, Joint Comments of Internet Engineers *et al.*, WC Docket No. 17-108, at 12-18 (filed Jul. 17, 2017) ("Joint Engineer Comments"); Comments of Public Knowledge and Common Cause, WC Docket No. 17-108, at 26 (filed Jul. 17, 2017) ("Public Knowledge Comments"); Comments of Free Press, WC Docket No. 17-108, at 41-45 (filed Jul. 17, 2017) ("Free Press Comments").

12 *See* Joint Engineer Comments at 19.

13 *Brand X*, 545 U.S. at 987.

remote thing."[14] Rather, "the ISP provisions Internet *connectivity*," and "[e]very device and end user that has Internet connectivity is 'on Net' and is a part of the Internet."[15] In provisioning such connectivity, BIAS providers enable a constant flow of computer-mediated communications between end-user devices and various servers and routers to facilitate interaction with online content (including information-generation, -storage, -retrieval, etc.).[16] In short, substantial evidence supports the conclusion that providing end users with the capability to manipulate information using edge services inherently relies on information-processing capabilities, not just transmission.[17]

Notably, consumers place significant weight on the ability to interact with stored data they obtain from BIAS providers, and not just the broadband transmission that is included as a component of the service. While proponents of Title II regulation assert without any evidentiary basis that consumers view BIAS as a mere conduit to third parties' edge services,[18] a recent survey of consumers confirms that they highly value the capabilities their BIAS providers offer to "*acquire* information" from internet websites, "*utilize* information" on the internet, "*retrieve*"

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14 Comments of Richard Bennett, WC Docket No. 17-108, at 11 (filed Jul. 17, 2017) ("Bennett Comments") (emphasis added).

15 *Id.* (emphasis added, internal quotation marks and citations omitted).

16 *Id.* at 11, 23-26; *see also* Richard Bennett, "EFF Engineers Letter Avoids Key Issues About Internet Regulation," High Tech Forum (Jul. 21, 2017) (rebutting technical claims made in Joint Engineer Comments), http://hightechforum.org/effs-engineers-letter-avoids-key-issues-about-internet-regulation/.

17 *See, e.g.*, Comcast Comments at 12-24; AT&T Comments at 59-90; Verizon Comments at 35-42; Comments of Sandvine, WC Docket No. 17-108, at 2-6 (filed Jul. 17, 2017) ("Sandvine Comments").

18 *See, e.g.*, Free Press Comments at 46-48.

such information," and otherwise "*process*" such information.[19] Not only do consumers expect their BIAS providers to offer such capabilities, but the vast majority view the functions they enable—such as the ability to search for and find information on web, to send and receive emails, to surf the Internet, and to shop online—as "must have."[20]

Second, the record confirms that, even apart from providing the capability to interact with web content, BIAS also integrates various other information-processing capabilities—Domain Name System ("DNS") services; caching; Distributed Denial of Service ("DDoS") protections, anti-spam features, and other security functions; IPv4-to-IPv6 conversion; email; and data storage; among others—that further underscore the conclusion that BIAS providers offer end users far more than telecommunications.[21] For example, as AT&T explains, DNS "translates human language (*e.g.*, the name of a website) into the numerical data (*i.e.*, an IP address) that computers can process," and thus is unquestionably a form of information-processing and "indispensable to ordinary users as they navigate the Internet."[22] Indeed, Sandvine explains that BIAS providers' DNS servers perform *all* of the statutorily enumerated information service functions.[23] Similarly, "[c]aching technologies use powerful information-processing algorithms

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19 *See* Market Strategies International, *Broadband Internet Service Use*, at 4 ("MSI Survey Report"), submitted as Attachment A to Ex Parte Letter of USTelecom and NCTA, WC Docket No. 17-108 (Aug. 28, 2017) (emphasis added).

20 *Id.* at 5.

21 *See, e.g.*, Bennett Comments at 10-23; AT&T Comments at 73-82; Sandvine Comments at 2-6.

22 AT&T Comments at 73.

23 *See* Sandvine Comments at 2 (explaining that such servers generate recursive DNS queries, acquire and store domain name information, transform and process end user queries, retrieve domain name data from the Internet, utilize domain name data, and make available information of various types that is stored in the DNS); *see also id.* at 3 (explaining how other ISP functionalities, including malware detection, port blocking,

to determine what to cache, where to cache it, and how long the content should be cached."[24] And, again, survey results confirm that most consumers (i) are aware of integrated service features offered by their BIAS provider, including email, online storage, security protection, and spam filters, and (ii) make use of such features,[25] all of which entail various forms of information-processing.

Title II proponents' efforts to cast all of these functions as mere "telecommunications management"—and thus carved out of the information service definition—are unavailing. Most fundamentally, such capabilities are offered for the benefit of *end users*, not for the BIAS provider's own benefit, thus confirming that they do not constitute management of telecommunications.[26] Even apart from consumer survey results confirming the importance of these features to end users, the fact that third parties can and do offer DNS and caching to end users on a standalone basis, concededly without managing the BIAS provider's network, confirms their status as information-service capabilities. BIAS providers also offer "IPv4-to-IPv6 gateway functions," and IPv6 "performs extensive packet processing" that "enable[s] connections that would not otherwise be possible (for example, an IPv4 node communicating with an IPv6 node)"—again, demonstrating that the relevant functionality is offered to consumers, as opposed to consisting of network management.[27] As AT&T further explains, the "telecommunications management" exception "codifies the identically worded exception in the MFJ's definition of 'information service' as well as the 'adjunct to basic' exception to the

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and spam and phishing protections, likewise entail various forms of information-processing).

24 AT&T Comments at 75.

25 *See* MSI Survey Report at 6.

26 *See, e.g.*, Comcast Comments at 19-20; AT&T Comments at 77.

27 Declaration of Peter Rysavy at 8, attached as Exhibit A to Comments of CTIA, WC Docket No. 17-108, (filed Jul. 17, 2017) ("Rysavy Declaration").

Commission's pre-1996 category of enhanced services," and those "'narrow' exceptions" did not include consumer-oriented functionalities like DNS or caching.[28]

Third, the statutory definition of a telecommunications service is not a good fit for BIAS, particularly because routine caching of information in ISPs' networks means that "[e]ven if a user identifies particular information (such as a web file) that she wants to retrieve or a particular website she wants to access, she will not know, much less specify, the location of the server on which that information or website content is stored and from which it will be retrieved by her ISP."[29] Opponents of the NPRM's proposals argue that customers placing telephone calls to mobile devices or a toll-free number often do not know where the recipient is located, yet that does not undermine the telecommunications service classification for telephony.[30] But customers placing telephone calls know that they are calling a particular person, entity, or destination—a specific "point" of communication determined by the end user. In contrast, BIAS consumers know only that they are accessing particular information, which is obtained from various different communications points—such as a CDN, an edge provider's host server, or a local ISP cache—without any input from the user. In short, ISPs, and not BIAS consumers, "specif[y]" the "points" of communication.[31]

Finally, to the extent proponents of Title II regulation contend that a telecommunications service classification is *compelled* by the Act,[32] that argument is plainly foreclosed by controlling precedent. As NCTA and others pointed out in their opening comments, the Supreme Court

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28 AT&T Comments at 77.

29 *Id.* at 76.

30 *See, e.g.*, Free Press Comments at 53-54.

31 47 U.S.C. § 153(50).

32 *See, e.g.*, Free Press Comments at 61; Public Knowledge Comments at 31.

made clear in *Brand X* that the earlier classification of BIAS as an information service represented "a permissible reading of the Communications Act,"[33] and the D.C. Circuit accordingly recognized that *Brand X* forecloses the argument that BIAS "is unambiguously a telecommunications service."[34] The statute thus unquestionably permits classifying BIAS as an information service. To the extent Title II proponents are suggesting that material changes since *Brand X* was decided should lead to a different result, those claims are unavailing. BIAS providers today continue to offer the same basic functionalities that were recognized as supporting an information-service classification in the *Cable Modem Declaratory Ruling* and in subsequent decisions.[35] Indeed, if anything, it has become all the more clear in recent years that BIAS is best classified as an information service, given BIAS providers' significant expansion of information-processing capabilities, including IPv4-to-IPv6 gateway functions, increased security tools, pop-up blockers, parental controls, and the like.[36]

Public Knowledge mistakenly asserts that the NPRM "ignores the phrase 'via telecommunications'" in the statutory definition.[37] To the contrary, both the NPRM and many commenters recognize that all of the information-processing capabilities offered by BIAS

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33 *Brand X*, 545 U.S. at 986; *see also id.* at 986-89.

34 *USTelecom v. FCC*, 825 F.3d 674, 704 (D.C. Cir. 2016).

35 *See Brand X*, 545 U.S. at 999-1000 (citing DNS and caching as examples of integrated information-processing functionalities in BIAS); *see also supra* at 8-10 (collecting citations to the record showing that DNS and caching functionalities continue to be part and parcel of the offering of BIAS).

36 *See, e.g.*, Rysavy Declaration at 5-9; Reply Comments of NCTA, GN Docket Nos. 14-28 & 10-127, at 20 (filed Sep. 15, 2014) ("In addition to the 'protocol conversion, IP address number assignment, domain name resolution through a domain name system (DNS), network security, and caching' functions identified in the *Cable Modem Order*, ISPs today have integrated new functionalities like 'spam protection, pop-up blockers, [and] parental controls,' along with 'reputation systems for processing potentially harmful data' and 'cloud-based storage.'" (internal citations omitted)).

37 Public Knowledge Comments at 27-28.

providers are provided "via telecommunications."[38] Indeed, that has never been in dispute; rather, as noted above, the sole disagreement in *Brand X* was whether BIAS providers offer only an information service (which, by definition, furnishes information-processing capabilities via telecommunications) or *also* offer telecommunications on a separate, stand-alone basis. Before the abrupt departure in the *Title II Order*, the Commission had consistently and correctly recognized that the former is the more reasonable construction of the Act, and the Supreme Court upheld the Commission's reasoning.[39]

The Commission plainly can return here to its long-standing interpretation that BIAS is an information service and not a telecommunications service. Although an agency must provide a "more substantial justification" if its "'new policy rests upon factual findings that contradict those which underlay its prior policy,'"[40] the Commission easily can do so here. As explained below, the record confirms that classifying BIAS as a Title II service has significantly harmed investment and technological innovation—harms that reclassification would ameliorate. On this record, the Commission's goal of promoting investment and technological innovation plainly would be a "reasoned explanation" for reverting back to the Commission's long-standing and overwhelmingly successful policy.[41]

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38 *See* NPRM ¶ 29; *see also, e.g.*, Comments of Tech Knowledge, WC Docket No. 17-108, at 39 (filed Jul. 17, 2017); Bennett Comments at 21-22.

39 *See Brand X*, 545 U.S. at 1000 (holding that the "service that Internet access providers offer to members of the public is Internet access, not a transparent ability (from the end user's perspective) to transmit information" (quoting Stevens Report ¶ 79)).

40 *Perez v. Mortg. Bankers Ass'n*, 135 S. Ct. 1199, 1209 (2015) (quoting *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009)).

41 *Fox*, 556 U.S. at 516.

B. The Record Confirms That Returning to a Title I Classification Will Promote Broadband Investment and Innovation

In addition to confirming that the factual particulars of BIAS make it an information service, the record also underscores the harms caused by the imposition of Title II regulation on BIAS providers, which restoring an information service classification will remove. In particular, the opening comments demonstrate that subjecting BIAS providers to an uncertain and overbroad common carrier regime has begun to impose significant economic and social costs—most notably, chilling broadband investment and innovation—and that such costs would continue to mount over time. Title II imposes such harms without delivering any actual benefits, given that the Internet has been open and free since its inception and will remain as such without heavy-handed government mandates. Indeed, restoring the Title I framework will be beneficial for BIAS providers and edge providers alike, as spurring greater infrastructure investment, faster speeds, and more extensive connectivity in turn will enable continuing improvements in edge services, all to the ultimate benefit of consumers. After all, that interrelationship is at the heart of the "virtuous circle" that the Commission has long sought to foster.

As a matter of basic economic principles, it is beyond dispute that increased regulatory uncertainty creates a drag on investment. In addition to NCTA's submission of a declaration from Dr. Bruce Owen, whose submission centers on that fundamental premise,[42] various other commenters submitted detailed economist declarations that provide both conceptual and empirical support for eliminating the overhang of common carrier regulation. For example, Comcast submitted a declaration from Dr. Christian Dippon, who explains that subjecting BIAS

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[42] *See* Bruce M. Owen, "Internet Service Providers as Common Carriers: Economic Policy Issues," at 6, attached as Appendix A to Comments of NCTA – The Internet & Television Association, WC Docket No. 17-108 (filed Jul. 17, 2017) ("Owen Paper") ("It is difficult to imagine a more effective way to decrease infrastructure investment funding than the uncertain prospect of a new, undefined regulatory expropriation.").

providers to "sweeping Title II provisions" has "created substantial uncertainty and the prospect of onerous ex-post conduct and rate regulation for BIAS providers."[43] The creation of "enormous regulatory uncertainty" under Title II and the related general conduct standard "has simple, predictable, and especially negative implications for U.S. consumers," including "lower levels of investment and, relatedly, lower levels of innovation, which will lead to lower levels of Internet subscriptions, yielding lower levels of employment at the macroeconomic level."[44]

Various other economic submissions echo these key points made by Drs. Owen and Dippon about the adverse impact of regulatory uncertainty under Title II. For example, Dr. Mark Israel and his colleagues point out that "[b]asic economic theory shows that the uncertainty created by regulation depresses investment incentives."[45] In particular, "[b]ecause the Title II Order and Internet Conduct Standard introduce so much regulatory uncertainty for broadband Internet service providers, they reduce incentives for firms to make investments, especially irreversible (or sunk) investments that will not be recoupable if the investment fails to deliver sufficient returns."[46] Drs. Andres Lerner and Janusz Ordover similarly explain that "investments in broadband Internet access networks, which inherently entail large initial sunk costs and long-term benefits (*i.e.*, expected revenue streams), are highly sensitive to increased risks," which means that "[s]mall increases in risk can yield a significant reduction in the expected [rate of

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43 Christian M. Dippon, "Public Interest Repercussions in Repealing Utility-Style Title II Regulation and Reapplying Light-Touch Regulation to Internet Services," at i, attached as Appendix C to Comments of Comcast Corp., WC Docket No. 17-108 (filed Jul. 17, 2017) ("Dippon Paper").

44 *Id.*

45 Declaration of Mark A. Israel *et al.*, WC Docket No. 17-108, at 49 (filed Jul. 17, 2017) ("Israel Paper").

46 *Id.* at 49-50.

return] of a project."[47] Drs. Carlton and Keating further note that, given the need for BIAS providers (and edge providers) to "invest continually and to adapt to ever-changing consumer demand … regulation can have detrimental effects on investment and innovation due to uncertainty regarding firms' ability to recoup investment over the long run … and can have the effect of lowering the expected rate of return."[48]

Defenders of Title II contend that, notwithstanding such basic economic tenets, the *Title II Order* will not result in diminished investment or other harms, in large part because of the forbearance granted by the Commission and the resultant imposition of a regime described in Orwellian terms as "light touch."[49] But these commenters overlook the sweeping scope of the obligations from which the Commission *refused* to forbear—in particular, Sections 201 and 202 of the Act—and its related imposition of the general conduct standard, even apart from the fact that any grant of forbearance can be rescinded.[50] And they likewise misconstrue the relevant empirical data on broadband investment, which demonstrates that such investment has indeed slowed in the wake of the *Title II Order*.

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47 Andres V. Lerner and Janusz A. Ordover, "An Economic Analysis of Title II Regulation of Broadband Internet Access Providers," at 9, attached as Exhibit A to Comments of Verizon, WC Docket No. 17-108 (filed Jul. 17, 2017) ("Lerner/Ordover Paper").

48 Dennis W. Carlton and Bryan Keating, "An Economic Framework for Evaluating the Effects of Regulation on Investment and Innovation in Internet-Related Services," at 11, attached to Comments of CALinnovates, WC Docket No. 17-108 (filed Jul. 16, 2017) ("Carlton/Keating Paper")

49 *See, e.g.*, Free Press Comments at 127-44; Public Knowledge Comments at 63-73.

50 *See, e.g.*, Dippon Paper at iii (explaining that the Commission's refusal to forbear from Sections 201 and 202 and its imposition of the general conduct standard created "the prospect of wide-ranging investigations using ad hoc criteria that directly affects future investment and innovation"); Israel Paper at 8 (explaining that, despite limited forbearance, "the regulatory regime imposed in the *Title II Order* substantially increases regulatory uncertainty and regulatory creep," especially "by imposing the core common carrier requirements of Title II (sections 201 and 202)" and adopting the general conduct standard, which "expressly gives the Commission the authority to condemn any conduct deemed to be 'unfair,' leaving uncertain how such a determination might be made.").

NCTA and its members surveyed preliminary economic data in their opening comments,[51] and several economists and other commenters have now bolstered the record with additional evidence showing that annual broadband investment would be several billion dollars higher but for the imposition of Title II regulation.[52] Such foregone investment, in turn, is responsible for a slowing of the growth rate of broadband speeds and network expansion. Whereas average broadband speeds had been increasing at a dramatic rate year-over-year before the *Title II Order*,[53] there has been a statistically significant decline in that growth rate since 2015; in fact, Dr. George Ford estimates that, if not for the *Title II Order*, "U.S. broadband speeds would have been about 10% higher—or about 1.5 Mbps faster—on average."[54] By the

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51 *See* NCTA Comments at 31-38; Comcast Comments at 29-30; *see also* Dippon Paper at 32-33.

52 *See, e.g.*, John W. Mayo *et al.*, "An Economic Perspective of Title II Regulation of the Internet," WC Docket No. 17-108, at 8 (filed Jul. 17, 2017) ("Mayo Paper") (assessing economic effects of Title II based on the historical application of Title II to telecommunications networks between 1996 and 2005, which "slowed telephone company investment by roughly $1 billion per year, a 5.5 percent decline relative to the companies' 1996 capital expenditures"); *see also* Robert Hahn, "How the Economics Can Inform Telecommunications Policy: The FCC's Proposed Action on Restoring Internet Freedom," at 13, attached as Exhibit B to Comments of CTIA, WC Docket No. 17-108 (filed Jul. 17, 2017) ("Hahn Paper") (citing comparable reduction in ILEC spending, compared to growth rate of cable operators' capital expenditures, which was more than twice as high in the absence of Title II regulation—7.5 percent versus 3.2 percent); Theodore R. Bolema, "An Assessment of the FCC's Proposal to Conduct a Cost-Benefit Analysis," at 1, attached to Comments of Free State Foundation, WC Docket No. 17-108 (filed Jul. 17, 2017) (estimating $5.6 billion in foregone broadband investment since 2015).

53 *See, e.g.*, Israel Paper at 25 (noting that average speeds for fixed broadband services had "increased steadily, tripling between 2011 and 2014"); *id.* at 17-18 (identifying similar increases in mobile broadband speeds).

54 George S. Ford, "Broadband Speeds Post-Reclassification: An Empirical Approach," at 1, attached to Comments of Digital Policy Institute, WC Docket No. 17-108 (filed Jul. 17, 2017) ("Ford Analysis of Broadband Speeds").

same token, the extension of broadband facilities into underserved areas has fallen sharply since the Commission imposed Title II regulation.[55]

The record similarly confirms that the overhang created by Title II and the general conduct standard is impeding innovation. As Dr. Robert Hahn observes: "Imagine the chaos that would result if NFL referees began calling penalties for conduct, plays, or formations that neither they, the teams, nor fans knew was prohibited before the game started."[56] Indeed, BIAS providers point out that the general conduct standard has produced that very type of confusion, and in turn has deterred or delayed the introduction of innovative service enhancements.

For example, the uncertain application of the *Title II Order* led Charter to "put on hold a project to build out its out-of-home WiFi network" and to "delay and then move more slowly with plans to launch a wireless service."[57] Comcast's launch of an IP version of its cable service was burdened by a year-long Bureau investigation under the general conduct standard—even though, as a Title VI offering, it was not even subject to the open Internet rules.[58] And smaller cable operators, with even more limited resources to devote to compliance with the nebulous general conduct standard, have been even more reluctant to take risks and thus have foregone

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55 *See* Hahn Paper at 22 (citing statements by small ISPs indicating that they have "abandoned or postponed plans to expand broadband access services to underserved and/or rural areas as a result of the regulatory uncertainty generated by the *Title II Order*").

56 *See id.* at 19.

57 Charter Comments at 11.

58 Comcast Comments at 37; *see also* Cox Comments at 16 ("The prospect of aggressive enforcement action based on poorly defined standards, as illustrated by questionable allegations pursued by the prior Commission, also has forced Cox to approach the development and launch of new product and service features with greater caution, thereby impacting its ability to quickly meet the ongoing demands of its customers within a highly competitive marketplace.").

various pro-consumer initiatives.[59] Such harms are by no means limited to BIAS providers; they also affect equipment manufacturers, software developers, and others throughout the Internet ecosystem.[60] Various economic submissions explain how such delayed and forgone innovations directly translate into consumer harm.[61]

Title II proponents point to the fact that capital investment and broadband speeds (among other metrics reflecting increased consumer welfare) have increased since 2015 in *absolute* terms.[62] But that is meaningless as an economic matter, because the relevant question is what investments *would have* occurred (and what resultant performance gains *would have* resulted)

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59 *See* Comments of the Wireless Internet Service Providers Association, WC Docket No. 17-108, at 11-16 (filed Jul. 17, 2017) ("Wireless Internet Service Providers Association Comments") (explaining how WISPs have forgone or delayed innovations); Comments of the American Cable Association, WC Docket No. 17-108, Appendices A-E (filed Jul. 17, 2017) ("ACA Comments") (attaching declarations from small BIAS providers describing decisions to delay or forgo innovative new services and features, including over-the-top video offerings and traffic optimization protocols).

60 *See, e.g.*, Comments of ACT – The App Association, WC Docket No. 17-108, at 3 (filed Jul. 17, 2017) ("ACT Comments") (explaining that the *Title II Order* "introduced significant legal uncertainties for service providers, as well as the edge providers that utilize free data plans to grow and support jobs"); Comments of Ericsson, WC Docket No. 17-108, at 7 (filed Jul. 17, 2017) ("Ericsson Comments") (explaining that regulatory uncertainty under the *Title II Order* jeopardizes its ability to collaborate with ISPs on various network technology initiatives).

61 *See, e.g.*, Lerner/Ordover Paper at 11 (explaining that "the significant ambiguity regarding what provider practices are permitted under Title II" and the general conduct standard "is likely to inhibit innovative business models, arrangements, and services," including those that "are likely to benefit consumers and content providers alike, and are generally output-enhancing"); Carlton/Keating Paper at 20 (explaining that "the *2015 Order* means that BIAS providers must assess every pricing decision . . . and proposed product offerings to determine the legal risk that such decisions would be characterized as unreasonable or unjust," and that "[s]uch a degree of regulatory oversight creates the risk that welfare-enhancing strategies could be delayed or deferred entirely due to regulatory concerns"); Israel Paper at 8 ("Indeed, the vague criteria adopted in the Internet Conduct Standard give the Commission exactly the sort of ill-defined, broad-sweeping authority to prohibit any practices deemed to hinder access to the Internet that has been shown to create substantial investment-chilling uncertainty.").

62 *See, e.g.*, Free Press Comments at 108-14, 127-36.

but for the *Title II Order*.[63] The fact that overall investment did not decline sharply is not surprising, given the long lead-time needed for capital investments in broadband networks to bear fruit and the continuing impact of competitive forces even in the face of overbroad regulation,[64] but it is cold comfort when substantial evidence demonstrates that such investments and consumer welfare gains would have been considerably *higher* if the Commission had refrained from imposing common carrier regulation.[65] Free Press repeats such errors in trumpeting that "more new U.S. 'over-the-top' video services launched in the two years following the Commission's 2015 vote than in the seven years prior."[66] In addition to ignoring the reality that the number of launches may well have been higher still if not for the imposition of common carrier regulation, Free Press fails to recognize that the massive network investments and upgrades undertaken by BIAS providers *before* the *Title II Order*—when the Title I framework remained in place—were primarily responsible for the explosion of streaming video services.[67]

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63 *See, e.g.*, Dippon Paper at 27 ("The relevant standard for continued investment is not the difference from last year's investment but what this year's investment *would have been* were it not for Title II reclassification." (emphasis added)); Owen Paper at 9 (noting that the relevant standard is to assess "the world as it would have been but for the imposition of Title II status").

64 *See* Israel Paper at 44.

65 *See, e.g.*, Owen Paper at 11-14 (concluding, based on available evidence, that investment would have been more substantial in the absence of Title II regulation); Israel Paper at 44 (concluding that "both investment and competition would be greater – and consumers would be better off – without Title II regulation"); Dippon Paper at 28-37 (demonstrating that Title II has had a materially adverse effect on investment and innovation).

66 Free Press Comments at 87.

67 *See* Israel Paper at 25 (citing historical evidence of broadband speed increases); Ford Analysis of Broadband Speeds, *supra* n.54 (demonstrating that the broadband speeds have increased at a slower pace following the *Title II Order*).

The Internet Association submitted a paper by Dr. Christopher Hooton that purports to make an empirical case for the proposition that Title II has not led to diminished investment,[68] but that study does no such thing. Critically, Dr. Hooton did not even *attempt* to analyze the effects of *Title II* on investment; he instead considered the economic effects of *open Internet regulations*, notwithstanding that the open-Internet principles—which NCTA and other leading industry representatives have expressly endorsed—are plainly distinct from the common carrier regulation at issue here.[69] That fact alone renders Dr. Hooton's analysis irrelevant to the Commission's assessment of the impacts of Title II.

In any event, Dr. Ford has shown that Dr. Hooton's analysis, even as applied to the wrong subject matter, suffers from several "fatal and sometimes shocking defects."[70] Most notably, instead of considering "*actual* investment data or us[ing] richer datasets, Dr. Hooton chose instead to run some regressions to produce forecasts of investment for much of the treatment period," which, as Dr. Ford explains, amounts to "simply mak[ing] his data up."[71] Dr. Ford's in-depth comparison of Dr. Hooton's data to other publicly available information reveals that the former "has been corrupted in some way" or at a minimum suggests "carelessness in the

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68 *See* Christopher Hooton, "An Empirical Investigation of the Impacts of Net Neutrality," attached to Comments of Internet Association, WC Docket No. 17-108 (filed Jul. 17, 2017) ("Hooton Paper").

69 *See id.* at 3 (stating objective of evaluating "evidence of any harms as a result of *net neutrality rules*" (emphasis added)).

70 *See* George S. Ford, "A Review of the Internet Association's Empirical Study of Network Neutrality and Investment," at 1 (Jul. 24, 2017), *available at* http://www.phoenix-center.org/perspectives/Perspective17-09Final.pdf ("Ford Jul. 2017 Paper"); George S. Ford, "A Further Review of the Internet Association's Empirical Study of Network Neutrality and Investment," at 1 (Aug. 14, 2017), *available at* http://www.phoenix-center.org/perspectives/Perspective17-10Final.pdf ("Ford Aug. 2017 Paper") (noting additional "errors as severe, if not worse than," those described in the July paper).

71 Ford Jul. 2017 Paper at 5-6 (emphasis added).

estimation or the reporting of results."[72] Dr. Ford recounts additional defects—including the fact that Dr. Hooton relied on "five separate data sources for his [statistical] analysis yet provides no clear description as to how the data is combined"—which not only precludes an "apples-to-apples comparison" but creates "a mix of not only many fruits but some meats and cheeses too."[73] Even apart from these obvious methodological problems, Dr. Hooton ultimately concludes that net neutrality regulations (again, in contrast to Title II) have produced "no measurable impact . . . on investment," which is "nearly as bad as finding a negative effect," given that the *Title II Order* was premised on the theory that it would produce "'*expanded* investments in broadband infrastructure,' which Dr. Hooton's analysis (among others) reveals is not the case."[74] And Dr. Ford explains that, after making the necessary corrections to Dr. Hooton's corrupted data, Dr. Hooton's analytical model actually "shows that investment is down 19% since reclassification was first introduced in 2010 by then-Chairman Julius Genachowski."[75]

Finally, in an attempt to show that the harms of common carrier regulation are overblown, opponents of the NPRM's proposals cherry-pick statements by ISP executives indicating that their businesses will survive the *Title II Order*.[76] But even apart from the fact that such statements appropriately identify the *uncertainty* created by the *Title II Order* as the principal source of harm (*e.g.*, the looming threat of regulatory second-guessing and ex-post rate

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72 Ford Aug. 2017 Paper at 3.

73 Ford Jul. 2017 Paper at 6.

74 *Id.* (quoting *Title II Order* ¶ 7, emphasis added).

75 Ford Aug. 2017 Paper at 7.

76 *See, e.g.*, Comments of Internet Association, WC Docket No. 17-108, at 15 (filed Jul. 17, 2017) ("Internet Association Comments").

regulation), BIAS providers in fact have consistently warned investors of the significant risks associated with the Commission's imposition of common carrier regulation.[77]

II. THE INTERNET WILL CONTINUE TO BE OPEN AND FREE UNDER A TITLE I CLASSIFICATION

Opponents of the NPRM's proposed restoration of an information service classification for BIAS engage in extensive hand-wringing over the purported threats to Internet openness they claim will occur in the absence of Title II regulation. Such concerns are groundless. The historical record is clear. For the first two decades of the Internet's existence, broadband Internet access service was regulated under Title I, not Title II. During that time, BIAS providers consistently adhered to open Internet principles, both as a matter of policy and as a good business practice. A free and unfettered Internet, in turn, led to an explosion of investment and innovation throughout the online ecosystem. The virtuous circle of investment and innovation that all parties espouse as the paramount objective in this proceeding developed and thrived under a Title I framework. And to the extent the Commission deems it appropriate to establish a regulatory backstop to reinforce the operation of market forces, the record confirms that several viable options are available outside of Title II for establishing an appropriately tailored approach.

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[77] *See, e.g.*, Comcast Corp., Form 10-K for FY 2016, at 17 (filed Feb. 3, 2017) (warning investors that "the FCC reclassified broadband Internet access service as a 'telecommunications service' subject to . . . certain common carrier regulations under Title II of the Communications Act"; that these common carrier requirements "are subject to FCC enforcement and could give rise to third-party claims for damages or equitable relief"; that there was uncertainty as to "the manner in which the FCC [would] interpret[] and enforce[]" these requirements; and that "[t]hese requirements could adversely affect our business"), *available at* https://www.sec.gov/Archives/edgar/data/902739/000119312517030512/d290430d10k.htm.

A. Nothing in the Record Demonstrates That ISPs Have the Incentive or Ability To Harm the Open Internet

At the heart of Title II proponents' case for imposing utility-style mandates is the assumption that BIAS providers have the incentive and ability to harm their customers and behave anti-competitively.[78] But, while the *Title II Order* accepted that proposition as an article of faith, the record before the Commission undercuts it, confirming that BIAS providers in fact have long demonstrated an abiding commitment to principles of openness and would suffer significant competitive harm if they failed to live up to that commitment.

NCTA's members and other BIAS providers and industry associations state unequivocally that they are firmly committed to operating in accordance with open Internet principles—namely, remaining transparent and refraining from blocking, throttling, or unreasonable discrimination. For example, Comcast's comments note that Chairman and CEO Brian Roberts has made "crystal clear" that "Comcast 'continue[s] to strongly support a free and Open Internet and the preservation of modern, strong, and legally enforceable net neutrality protections.'"[79] He added that "'Comcast's business practices reflect that commitment and ensure those protections for its customers, and will continue to do so no matter how the Commission ultimately proceeds,' and that Comcast does not and will not block, throttle, or discriminate against lawful content delivered over the Internet."[80] Charter's comments similarly explain that "Charter is firmly committed to an open internet" and that it has "long put the

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78 *See, e.g.*, Internet Association Comments at 19-23; Public Knowledge Comments at 105-07, 111-12.

79 Comcast Comments at 2 (quoting blog post of Brian L. Roberts).

80 *Id.*; *see also id.* at 2-3 (quoting similar commitments by Comcast's Senior Executive Vice President and Chief Diversity Officer, David L. Cohen, and by Dave Watson, President and CEO of Comcast Cable).

principles of an open internet into practice."[81] Charter thus does not "block, throttle, or otherwise interfere with the online activity of [its] customers, and [it is] transparent with [its] customers regarding the performance of [its] service."[82] Cox, too, is "unwaveringly committed to maintaining Internet freedom as a matter of sound business and public policy," and pledges "[r]egardless of any regulatory requirements" to "continue to provide unimpeded access to all of the Internet content and services that its customers desire—without throttling or blocking lawful traffic or engaging in unreasonable discrimination."[83]

These strong statements reflect not only a philosophical commitment to act in the best interest of customers, but also a pragmatic recognition that failing to do so would be counterproductive as a business matter. There is broad agreement in the record with NCTA's observation that "it would be irrational for ISPs to undermine the very openness that has long buoyed their businesses for some short-term gain."[84] As Charter explains, its pledge to act in accordance with open Internet principles flows from its "business objective of providing a

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81 Charter Comments at 1-2.

82 *Id.* at 2.

83 Cox Comments at 1; *see also, e.g.*, AT&T Comments at 1 (noting that AT&T has consistently supported open Internet principles and will continue to "conduct [its] business in a manner consistent with an open Internet" because its "customers demand no less"); Verizon Comments at 1 (confirming that Verizon is "committed to an open Internet," meaning that "consumers should be able to access the legal content of their choice when and how they want… [a]nd providers (network and edge alike) should be able to continue to expand and grow their networks, services, and technologies without fear of being cut short or held back by either unnecessary regulation or by the anticompetitive practices of anyone in the Internet ecosystem"); Comments of Frontier Communications Corp., WC Docket No. 17-108, at 5-6 (filed Jul. 17, 2017) (making similar commitments); Comments of T-Mobile USA, Inc., WC Docket No. 17-108, at 3-4 (filed Jul. 17, 2017) (same).

84 NCTA Comments at 51; *see also* Owen Paper at 3 (explaining that assumptions that ISPs will act anti-competitively are "dead wrong" because such providers actually have strong incentives to act in accordance with principles of openness so they can meet customers' needs).

superior broadband experience to [its] customers."[85] Given that "customers value … broadband service precisely because they can use it in any way they choose, including to access data-intensive apps such as streaming video and gaming,"[86] it would be irrational and self-defeating to hamper such opportunities. Verizon likewise notes that its "business depends on an open Internet," and it has billions of dollars in investments riding on the industry's continued adherence to consensus openness principles.[87] Indeed, that is why, when former Chairman Powell first articulated the four "Internet freedoms" in 2004 and the Commission subsequently adopted the 2005 Policy Statement memorializing such freedoms, the articulated principles reflected a broad consensus among stakeholders as to how BIAS providers did and should operate, rather than an exhortation to change providers' conduct.[88]

A significant reason why BIAS providers lack either the incentive or ability to block or throttle Internet traffic or to engage in unreasonable discrimination against edge providers is that the competitive marketplace would penalize firms that do so. Several economic papers and other record submissions demonstrate that there is significant competition both for fixed and mobile BIAS services. For example, Dr. Mark Israel and his colleagues identify "intense rivalry" among "telcos, cable companies, and other entrants with respect to fixed Internet services," as reflected in widespread consumer choice (including that, as of June 2016, "97 percent of developed census blocks had at least two providers offering fixed 10 Mbps or greater Internet service," and 79 percent of the blocks had at least three providers); "[s]teady improvements in

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85 Charter Comments at 2.

86 *Id.*

87 Verizon Comments at 5.

88 *See* Michael K. Powell, *Preserving Internet Freedom: Guiding Principles for the Industry*, 3 J. ON TELECOMM. & HIGH TECH L. 5 (2004); *see also Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, Policy Statement, 20 FCC Rcd 14986 ¶ 4 (2005).

quality" (including average annual speed increases of a whopping *47 percent* by cable providers); and heavy advertising expenditures (which, as an economic matter, would be irrational absent strong competition).[89] Dr. Israel's analysis likewise reveals intense rivalry among wireless BIAS providers.[90]

In the face of such competition, BIAS providers that fail to deliver the quality and value consumers demand—including the ability to access online content and services of their choosing without being blocked, throttled, or otherwise subject to unreasonable conduct—will lose existing customers and fail to attract new customers.[91] And in the era of social media, any anticompetitive conduct would become widely known almost instantaneously, resulting in significant consumer backlash. Moreover, assertions that market forces do not operate efficiently in the broadband arena because customers have difficulty switching broadband services are belied by substantial record evidence. As Dr. Israel and his colleagues explain, "[t]he ability to switch fixed access providers is demonstrated by the fact that churn is an important strategic focus in the broadband Internet access industry."[92] Indeed, "the ability to switch leads firms to offer substantial inducements to stay, thus benefiting even those customers

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89 Israel Paper at 24-25; *see also* Timothy J. Tariff, "Consistent Measurement of Broadband Availability: Implications for the Federal Communications Commission's Restoring Internet Freedom Notice of Proposed Rulemaking," at 2 (explaining that "the significant growth in broadband availability calls into question the FCC's … predictive judgement (based on 2009 data) that competition was insufficient"), attached to Comments of Timothy J. Tardiff, WC Docket No. 17-108 (filed July 17, 2017); Mayo Paper at 3 (rebutting assertions of insufficient competition and concluding that "the presence of competition compels ISPs to offer high quality services at attractive prices to prospective consumers in the hope they become actual customers").

90 *Id.* at 15-18; *see also* Lerner/Ordover Paper at 20-21.

91 *See, e.g.*, Israel Paper at 27 (explaining that the prospect of consumer switching "serves to discipline Internet provider behavior"); Mayo Paper at 3 (same).

92 Israel Paper at 26.

who ultimately choose not to switch."[93] Drs. Lerner and Ordover point to consumer survey data confirming that "consumers switch broadband providers frequently, with 17.6 percent switching in the prior 12 months, 33.1 percent switching in the prior 2 years, and 49.4 percent switching in the prior 4 years."[94] Another survey showed that "71 percent of respondents said they would switch to a competing service if their ISP started to block or charge extra to use high-bandwidth internet services."[95] "This significant rate of switching due to non-price factors highlights that consumers are well-informed about the quality attributes, and are sensitive to quality differences between providers."[96]

Given that "anti-consumer actions by Internet providers would lead to substantial costs in the form of consumer departures,"[97] it is hardly surprising that real-world evidence of such conduct over the past two decades is virtually non-existent. Proponents of Title II regulation trot out a list of stale anecdotes that purportedly demonstrate a genuine threat to openness, but those supposed "examples" of harm have been thoroughly discredited many times before, and again in the opening comments.[98]

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93 *Id.*

94 Lerner/Ordover Paper at 27.

95 *Id.* at 27-28.

96 *Id.* at 28.

97 Israel Paper at 27.

98 *See, e.g.*, AT&T Comments at 15-19 (demonstrating that predictions of doom in the absence of heavy-handed proved wildly inaccurate); *id.* at 19-21 (explaining that the "historical record … is not only devoid of any *systematic* market failure requiring a prescriptive regulatory response, but also devoid of any *individual instances* in which ISPs have engaged in conduct that could even logically justify intervention beyond core prohibitions on unjustified blocking and throttling" (emphasis in original), and debunking supposed instances of misconduct); *see also Verizon v. FCC*, 740 F.3d 623, 664-65 (D.C. Cir. 2014) ("That the Commission was able to locate only four potential examples of such conduct is, frankly, astonishing. In such a large industry . . . one would think there

One of the more frequently repeated tropes is that Comcast's so-called "blocking" of BitTorrent traffic in 2007 demonstrates the need for common carrier mandates,[99] but that argument is unavailing for several reasons. Most significantly, these commenters overlook the fact that the network management practice at issue was intended in good faith to prevent a small number of customers' initiation of multiple, simultaneous streams of peer-to-peer traffic—which at the time was consuming a significant portion of overall network resources—from undermining the Internet experience of other customers. Some groups took issue with the form of network management, but as noted technologist Richard Bennett explains, Comcast was attempting to address a significant router design issue (known as "buffer bloat") that was causing BitTorrent traffic to adversely affect other applications,[100] and the intervention was not motivated by any anticompetitive objective, as even critics of Comcast concede.[101] When complaints emerged about Comcast's particular focus on BitTorrent, Comcast voluntarily adopted a protocol-agnostic network management practice, several months before any Commission action. In all events, whether or not Comcast's particular network management practice should have been viewed as appropriate or objectionable, opponents' concerns were fully resolved in the absence of Title II

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should be ample examples of just about any type of conduct.") (Silberman, J., dissenting).

99 *See, e.g.*, Free Press Comments at 32, 37, 67; Public Knowledge Comments at 111; Comments of INCOMPAS, WC Docket No. 17-108, at 70-71 (filed Jul. 17, 2017) ("INCOMPAS Comments").

100 *See* Bennett Comments at 7. Notably, BitTorrent later acknowledged this technical issue and modified its code to reduce its impact on other applications. *Id.*

101 *See, e.g.*, Harold Feld, "Evaluation of the Comcast/BitTorrent Filing — Really Excellent, Except For The Gapping [*sic*] Hole Around the Capacity Cap" (Sept. 22, 2008) ("[I]t appears to me that Comcast did not block for anticompetitive reasons."), http://www.wetmachine.com/tales-of-the-sausage-factory/evaluation-of-the-comcastbittorrent-filing-really-excellent-except-for-the-gapping-hole-around-the-capacity-cap/.

(or even binding rules of any kind), and Comcast and other BIAS providers over the decade since have made clear their firm commitment to openness principles.[102]

B. If the Commission Determines That a Regulatory Backstop Is Necessary, the Record Confirms That There Are Several Viable Approaches That in No Way Depend on Title II

While the record provides a strong case for concluding that regulation is not necessary to safeguard the open Internet, NCTA has consistently expressed support for an appropriate light-touch backstop. As NCTA has argued and a diverse array of other commenters agree,[103] enacting legislation to memorialize consensus open Internet principles represents the best path forward. Legislation would put an end to the destructive toggling between competing classifications and inconsistent regulatory approaches,[104] and Congress can best safeguard the

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102 *See supra* at 23-24.

103 *See, e.g.*, Comcast Comments at 51 (calling for legislation to establish binding open Internet rules); Cox Comments at 3 ("The best way to safeguard Internet openness while promoting continued investment and innovation is for Congress to enact legislation that enshrines a narrowly tailored, light-touch regulatory framework for BIAS."); Internet Association Comments at 17 (expressing support for "legislative action codifying the existing net neutrality rules"); Comments of The Computing Technology Industry Association (CompTIA), WC Docket No. 17-108, at 1 (filed Jul. 17, 2017) ("CompTIA has continued to support net neutrality legislation, even after the Commission released its 2015 Open Internet Order, to provide the necessary certainty for the industry."); Comments of LGBT Technology Partnership, WC Docket No. 17-108, at 2 (filed Jul. 17, 2017) ("[T]he only way to ensure long-term legal consistency and prevent policy and rule changes based on which way the political pendulum is currently swinging at the FCC is for Congress to reach across the aisle and pass common sense legislation that works for today's dynamic digital networks."); Comments of the National Multicultural Organizations, WC Docket No. 17-108, at 6-7 (filed Jul. 17, 2017) (explaining that "a statutory solution has been supported on both sides of the political aisle").

104 *See, e.g.*, Ericsson Comments at 14 ("Without legislation, the current flux (or even risk of it) creates significant uncertainty about whether any regime currently in place will remain intact, and the prospect of toggling between opposing frameworks risks grinding innovation to a halt."); ACT Comments at 16 (calling for congressional action because "[r]apid changes between titles create legal uncertainties that hurt investments and innovation, industry and consumers"); Comments of Oracle Corporation, WC Docket No. 17-108, at 6 (filed Jul. 17, 2017) ("To achieve a lasting solution to the issues at hand, and to prevent additional shifts in the regulatory framework that quell innovation and

public interest in ensuring adherence to principles of openness while preserving and strengthening incentives for investment and innovation. The Commission's regulatory tools are far more limited under existing law, given that the Act does not explicitly address open Internet principles—except insofar as it directs the Commission to *refrain* from regulating the Internet.[105] While a handful of Title II proponents affirmatively *oppose* enacting legislation,[106] their calls to invert our constitutional system of governance—such that the elected legislature would defer to appointed agency officials (who again have been forced to rely on statutory language designed primarily for the public switched telephone network, not the Internet)—cannot be taken seriously.

While legislation remains under consideration, the Commission and the Internet ecosystem would be well served by relying on BIAS providers' strong public commitments to adhere to open Internet principles. As many commenters recognize, such public commitments are enforceable by the FTC, an agency that also can address broadband privacy in an even-handed and flexible manner.[107] Importantly, Acting FTC Chair Maureen Ohlhausen has made

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investment, Congress should enact legislation that establishes once and for all that broadband internet access is an integrated information service."); Comments of Free State Foundation, WC Docket No. 17-108, at 63 (filed Jul. 17, 2017) ("Free State Foundation Comments") ("A significant degree of predictability and certainty in the legal regime are critical to promoting innovation and investment and also essential to maintaining the rule of law.").

105 *See* 47 U.S.C. § 230(b)(2) (establishing national policy "to preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, unfettered by Federal or State regulation"); *see also id.* § 1302 (directing the Commission to eliminate barriers to broadband deployment through deregulatory measures such as forbearance).

106 *See, e.g.*, Free Press Comments at 23, 89-90.

107 *See, e.g.*, Comcast Comments at 63-67 (explaining various benefits of relying on FTC oversight); Comments of CenturyLink, WC Docket No. 17-108, at 34 (filed Jul. 17, 2017) ("CenturyLink Comments"); Cox Comments at 23-25; Comments of the Information Technology and Innovation Foundation, WC Docket No. 17-108, at 6 (filed

clear that the FTC stands ready to play such a role, and that the public commitments many BIAS providers already have made "to adhere to net neutrality principles" are "enforceable by the FTC."[108] Her comments also recognize that the limited number of alleged non-neutral practices that occurred before the 2015 Order "suggest that ISPs are already accommodating consumer demands," and thus "there may not be need for regulation."[109] FTC staff also filed comments, pointing out that the FTC's "unfair and deceptive practices . . . standard has proven to be enforceable in the courts" and "has proven adaptable to protecting consumers in a wide range of industries and situations, including online privacy and data security."[110] FTC oversight also has the advantage of "avoiding overly-prescriptive rules that may quickly become obsolete in a rapidly-changing industry" and "is able to protect consumers and the competitive process without placing undue burdens on industry."[111]

In addition to relying on FTC enforcement of BIAS providers' public commitments, many commenters note that the D.C. Circuit has held that the Commission may rely on Section 706 of the Telecommunications Act of 1996 to take appropriately tailored action in support of open Internet principles.[112] The Wireless Internet Service Providers Association notes

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Jul. 17, 2017) ("Information Technology and Innovation Foundation Comments"); Free State Foundation Comments at 38-45.

108 Comment of Maureen K. Ohlhausen, Acting Chairman, Federal Trade Commission, WC Docket No. 17-108, at 11 (July 17, 2017).

109 *Id.* at 10.

110 Comments of the Staff of the Federal Trade Commission, WC Docket No. 17-108, at 20-21 (filed Jul. 17, 2017).

111 *Id.* at 21.

112 *See, e.g.*, Comcast Comments at 58-63; Cox Comments at 4-5; ACA Comments at 72; AT&T Comments at 101-04; Comments of Communications Workers of America and NAACP, WC Docket No. 17-108, at 12 (filed Jul. 17, 2017); Information Technology and Innovation Foundation Comments at 4; Comments of Akamai Technologies, Inc., WC Docket No. 17-108, at 13 (filed Jul. 17, 2017); Public Knowledge Comments at 62.

that "Section 706 is a better authority than Title II" to underpin Commission action in this regard because "Section 706 is affirmatively intended to encourage broadband deployment," whereas Title II regulation "has created harmful uncertainty that undermines both regulatory consistency and investor confidence, thereby impeding salutary innovation and competition."[113] While NCTA submits that the record does not demonstrate any need for Commission action at this time, the widespread recognition of the Commission's *authority* to take action—under an appropriate record that demonstrates a need to do so, and based on the guidance provided by the *Verizon* court[114]—rebuts opponents' claims that the Commission would be powerless without Title II to respond to any open Internet concerns that emerge.

C. The Record Also Underscores the Importance of Ensuring That the Federal Framework Is Appropriately Tailored

Finally, regardless of the approach taken to safeguard open Internet principles, the record provides strong support for ensuring an appropriately tailored framework by eliminating the overbroad general conduct standard, refraining from regulating Internet traffic exchange or specialized services, maintaining technological neutrality, and preempting state or local actions that are inconsistent with federal policy.

1. The Commission Should Eliminate the General Conduct Standard

There is widespread agreement across commenters with otherwise-divergent views that the general conduct standard causes significant harm without countervailing benefits.[115] As

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113 Wireless Internet Service Providers Association Comments at 24.

114 *See Verizon*, 740 F.3d at 658-59.

115 *See, e.g.*, AT&T Comments at 51-52; CenturyLink Comments at 32; Comments of Sprint Corporation, WC Docket No. 17-108, at 5-7, (filed Jul. 17, 2017); Comments of CTIA, WC Docket No. 17-108, at 9-12 (filed Jul. 17, 2017) ("CTIA Comments"); ACT Comments at 3; Bennett Comments at 3; Jon Peha, "Light-Touch Regulation by Banning Discrimination," § 2.1, WC Docket No. 17-108 (filed Jul. 17, 2017) ("Peha Paper");

discussed above, many of the economic submissions in the record demonstrate that, as an embodiment of core common-carrier mandates, the general conduct standard creates significant chilling effects that impede investment and innovation.[116] Not surprisingly, given such adverse effects, BIAS providers almost unanimously support elimination of the general conduct standard, with small providers explaining that they are particularly hard hit by such a boundless and unpredictable standard.[117] But such harms are not limited to ISPs; as ACT explains, for example, the general conduct standard likewise creates paralyzing uncertainty for app developers and other edge providers.[118] Ericsson describes similar harms for equipment manufacturers.[119] And perhaps most telling are the concessions by supporters of relatively expansive open Internet rules that the general conduct standard is deeply flawed. Dr. Jon Peha, despite supporting rules prohibiting unreasonable discrimination, recognizes that the general conduct standard threatens to deter BIAS providers "from offering services that would . . . benefit consumers."[120] Similarly, EFF acknowledges that the broad discretion embodied in the general conduct standard results in significant burdens for regulated providers and could "discourage innovation and impede the

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Comments of the Electronic Frontier Foundation on Notice of Proposed Rulemaking, WC Docket No. 17-108, at 28-29 (filed Jul. 17, 2017) ("Electronic Frontier Foundation Comments").

116 *See supra* at pgs. 13-17 & nn. 42-48, 50, 52-56.

117 *See, e.g.*, ACA Comments at 63 (explaining that efforts to comply with the general conduct standard "increased ACA members' legal and consulting costs, diverting scarce resources from service and network improvements," and that the rule also has "imposed indirect costs, by causing smaller ISPs to forgo rolling out innovative new service features or pricing plans that would have benefited the ISPs and their customers alike"); Wireless Internet Service Providers Association Comments at 32 (explaining burdens of general conduct standard and calling for its elimination).

118 *See* ACT Comments at 3.

119 *See* Ericsson Comments at 7.

120 Peha Paper § 2.1.

Internet's continued growth as a platform for speech, commerce, and social activity."[121] In short, the record strongly supports ending the regulatory overreach caused by the general conduct standard.

2. The Commission Should Not Regulate Internet Traffic Exchange or Specialized Services

Just as the Commission concluded in 2010, the consensus principles of Internet openness do not justify regulating Internet interconnection and traffic-exchange or specialized services (later called "non-BIAS data services"). With respect to Internet traffic exchange, commenters recognize that the elimination of the telecommunications service classification of BIAS will undermine the previous assertion of legal authority over such commercial arrangements.[122] As a policy matter, the record confirms that the Commission should return to the longstanding deregulatory framework for Internet traffic exchange. And, as a factual matter, regulation is entirely unnecessary because the traffic-exchange marketplace is robustly competitive and provides myriad ways for edge providers to deliver traffic to BIAS networks (and vice versa), including not only direct peering but transit services and content delivery network ("CDN") services, many of which are settlement-free.[123] Edge providers have complete control in deciding how to route their traffic across such routes,[124] and, as Cox points out, large edge

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121 Electronic Frontier Foundation Comments at 28-29.

122 *See, e.g.*, Comcast Comments at 73-74; AT&T Comments at 46.

123 *See* AT&T Comments at 46-49; Comcast Comments at 75-76; NCTA Comments at 46-47.

124 *See* Comcast Comments at 75-76.

providers often can dictate economic terms to most BIAS providers (notwithstanding some advocates' contrary assumptions).[125]

The multiplicity of interconnection routes and evidence of constantly declining prices in the transit and CDN marketplace powerfully rebuts claims that BIAS providers possess "gatekeeper" control or a "terminating access monopoly." As AT&T points out, "[n]o broadband ISP can 'tariff' the 'service' of providing access to its end users, and no backbone or other third-party network has any regulatory obligation to interconnect with any ISP, let alone pay whatever rates the ISP might wish to charge for access to its users."[126] As a result, calls for one-sided regulation of BIAS providers in this competitive arena are "incoherent."[127]

Some proponents of interconnection regulation assert that certain large ISPs refused to upgrade interconnection capacity on their networks in 2014, in the face of Netflix's dramatic growth, and that such instances justify regulatory intervention.[128] But such claims are misleading and unpersuasive. Critically, *Netflix* was solely responsible for determining how to route its content to BIAS networks, and its unilateral business decision to abandon third-party CDN arrangements on which it had long relied in favor of its own CDN led to brief negotiating

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125 *See* Cox Comments at 34-35; *see also* Israel Paper at 35-36 (explaining that "broadband Internet service providers frequently pay backbone providers for transit, effectively paying to enable their own customers' access to content").

126 AT&T Comments at 33.

127 *Id.* at 32; *see also* Israel Paper at 34-36 (explaining why there is no economic rationale to characterize BIAS as a terminating access monopoly and demonstrating that there is no sound basis for one-sided regulation of traffic-exchange arrangements); Jonathan E. Nuechterlein & Christopher S. Yoo, *A Market-Oriented Analysis of the "Terminating Access Monopoly" Concept*, 14 Colo. Tech. L.J. 21 (2015); Owen Paper at 7 (rebutting the *Title II Order*'s "unsupported conclusion that ISPs are 'gatekeepers' or 'terminating access monopolies' warranting particularly invasive regulation").

128 *See, e.g.*, Internet Association Comments at 26, 28; Public Knowledge Comments at 73-77, 82-84; Comments of Level 3 Communications, WC Docket No. 17-108, at 11-12 (filed Jul. 17, 2017); INCOMPAS Comments at 28-32.

impasses as Netflix (and Cogent) sought to upend traditional economic arrangements.[129] Indeed, Cogent transmitted traffic well beyond the capacity deemed acceptable under ISPs' settlement-free policies and refused to negotiate a commercial arrangement for additional capacity,[130] and Cogent later admitted that it accorded Netflix traffic lower priority than other content for its own economic reasons, thereby contributing to congestion.[131] Ultimately, however, there was no need for Commission action because the parties resolved their dispute without any regulatory intervention.

The Commission should reject calls to take sides in the long-running dispute over who is to blame for temporary congestion at interconnection points; rather, the key takeaway from the many years of a well-functioning interconnection marketplace is that commercial negotiations have successfully addressed the needs of edge providers, BIAS providers, and transit providers.[132] Far from facilitating the resolution of any future negotiating disputes, maintaining regulation in this competitive arena would inevitably cause economic distortions and destabilize the marketplace, especially when the regulation is one-sided—*i.e.*, allowing edge providers, transit providers, or CDNs to file complaints against BIAS providers, but depriving BIAS providers of any ability to challenge the reasonableness of other parties' practices.[133]

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129 *See, e.g.*, Comcast and Time Warner Cable Inc., Opposition to Petitions to Deny and Response to Comments, MB Docket No. 14-57, at 209-11 (citing Declaration of Kevin McElearney) (filed Sept. 23, 2014).

130 *See id.*

131 *See* Dan Rayburn, "Cogent Now Admits They Slowed Down Netflix's Traffic, Creating a Fast Lane & Slow Lane," StreamingMediaBlog.com (Nov. 5, 2014), available at http://blog.streamingmedia.com/2014/11/cogent-now-admits-slowed-netflixs-traffic-creating-fast-lane-slow-lane.html.

132 *See e.g.*, Comments of The Independent Film & Television Alliance, WC Docket No. 17-108, at 6 (filed Jul. 17, 2017).

133 *See, e.g.*, Cox Comments at 34-35; AT&T Comments at 48-49; Comcast Comments at 74-76.

In contrast to the push for interconnection regulation by several parties, very few commenters even attempt to make the case for regulating specialized services. As NCTA argued in its opening comments,[134] and as other parties agree, the Commission should make clear that it will neither regulate specialized services directly nor seek to micromanage network owners' allocation of capacity across distinct service offerings.[135]

3. The Commission Should Maintain Technological Neutrality

There is also widespread consensus in the record regarding the need for regulatory parity as between fixed and mobile broadband platforms. NCTA's opening comments explain that, regardless of the regulatory approach taken by the Commission, it must treat fixed and mobile BIAS services comparably to avoid competitive distortions and consumer confusion.[136] Given the clear evidence of intermodal competition and the impossibility of justifying different sets of rules for different providers, no party argues that the Commission should return to the regulatory asymmetry reflected in the *2010 Open Internet Order*. It would therefore be arbitrary and capricious, even apart from being profoundly unwise, to introduce such asymmetry in this proceeding.

4. The Commission Should Prevent State or Local Actions from Undermining Federal Broadband Policy

Finally, consistent with NCTA's call for reaffirming the primacy of federal law with respect to the regulation of BIAS,[137] other commenters likewise call for preempting state or local

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134 *See* NCTA Comments at 49-50.

135 *See, e.g.*, Comcast Comments at 76-78; Cox Comments at 33.

136 NCTA Comments at 59-63.

137 *See id.* at 63-68.

actions that would interfere with federal prerogatives.[138] A few parties suggest that state and local governments should exercise coequal, or even primary, authority over broadband facilities for some purposes, pursuant to their "police powers" or other authority.[139] Such commenters also argue that the Commission lacks authority to preempt state broadband regulation.[140] But the record makes clear, consistent with well-established judicial precedent, that the federal government has exclusive authority to regulate interstate information services—including BIAS, as properly classified—and, in any event, states and localities are barred from taking any action that conflicts with or frustrates the purposes of federal policy (whether expressed in the form of affirmative mandates or deregulatory action).[141]

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138 *See, e.g.*, Comcast Comments at 78-82; Verizon Comments at 21-22; CTIA Comments at 54-58.

139 *See, e.g.*, Comments of California Public Utilities Commission, WC Docket No. 17-108, at 5 (filed Jul. 17, 2017).

140 *See id.* at 5; Comments of the City and County of San Francisco, WC Docket No. 17-108, at 9-10 (filed Jul. 17, 2017).

141 *See Ark. Elec. Coop. Corp. v. Ark. Pub. Serv. Comm'n*, 461 U.S. 375, 384 (1983) ("[A] federal decision to forgo regulation in a given area may imply an authoritative federal determination that the area is best left unregulated, and in that event would have as much preemptive force as a decision to regulate.") (emphasis in original); *see also, e.g.*, Comcast Comments at 78-82 (citing cases); Verizon Comments at 21-22 (same).

CONCLUSION

The opening comments provide powerful legal, factual, and policy-based support for the NPRM's proposal to restore the information service classification for BIAS. NCTA and other representatives of the broadband industry are fully committed to the openness principles that have long undergirded the Internet economy, and that commitment will not change under a Title I framework. Indeed, the open Internet developed and thrived under the longstanding, bipartisan, Title I framework, and it will continue to do so once an appropriately tailored light-touch is restored.

Respectfully submitted,

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